

We claim:

1. A fibrocyte-based vaccine formulation comprising isolated fibrocytes and an antigenic component, wherein the antigenic component is selected from the group consisting of pulsed antigen protein, peptide, lipid, carbohydrate or a synthetic antigen thereof, a gene encoding specific antigenic determinants of proteins or peptides, tumor cells, and membrane fragments from tumor cells.

5 2. The fibrocyte-based vaccine formulation of claim 1 wherein the antigenic component is a tumor cell or a tumor cell membrane or subtraction thereof that is fused with the isolated fibrocytes to form a fused cell that is the fibrocyte-based vaccine formulation.

10 3. The fibrocyte-based vaccine formulation of claim 2 wherein the fusion process occurs *ex vivo* and the fibrocyte-based vaccine formulation is administered *in vivo*.

4. The fibrocyte-based vaccine formulation of claim 1 wherein the fibrocyte-based vaccine formulation is directed against an infectious disease and is formed by transfecting fibrocytes with a gene encoding a viral or a bacterial antigenic determinant that is displayed as an MHC class II antigenic determinant on the surface of the transfected fibrocytes.

15 5. A method for establishing an immune response against a specific antigen by administering a fibrocyte-based vaccine formulation of claim 1.

6. The method of claim 5 wherein the immune response is directed against a tumor antigen.

20 7. The method of claim 5 wherein the immune response is directed against a viral antigen.

8. The method of claim 5 wherein the immune response is directed against a bacterial antigen, or a parasite antigen.

25 9. The method of claim 5 wherein the fibrocyte-based vaccine is produced by a process comprising pulsing fibrocytes in culture with an antigen peptide or protein, or transfecting fibrocytes with genes encoding specific antigenic determinants of peptides or proteins, or by fusing tumor cells (whole cells or membrane fragments thereof) with fibrocytes.

30 10. A process for producing a fibrocyte-based vaccine formulation, comprising: (a) obtaining isolated fibrocytes, and (b) either (i) pulsing fibrocytes in culture with an antigen peptide or protein; or (ii) transfecting fibrocytes with genes encoding specific antigenic determinants of peptides or proteins; or (iii) fusing tumor cells (whole cells or membrane fragments thereof) with fibrocytes.

35 11. The process of claim 10 wherein the fusion process (iii) is performed by mixing a population of isolated fibrocyte cells taken from a patient having cancer with tumor cells taken from the patient in a fusion catalyst, and isolating fused cells from non-fused fibrocytes or tumor cells by density gradient means to form a fibrocyte-based vaccine formulation.

12. The process of claim 11 further comprising irradiating the isolated fibrocyte-based vaccine formulation to insure that it is incapable of growth.